
EFFECT OF ANCHOR BORROWERS' PROGRAMME ON RICE PRODUCTION IN SOUTHEAST, NIGERIA

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ABSTRACT

The study assessed the effect of Anchor Borrowers' Programme on rice production in Southeast, Nigeria. Specifically, ascertained the output of rice of beneficiaries and non-beneficiaries of Anchor Borrowers, determined the income of rice of beneficiaries and non-beneficiaries and determine the constraints to rice farmers' participation in Anchor Borrowers' Programme. Multi-stage sampling procedures were used to select a sample size of two hundred and forty rice farmers, comprising 120 non-beneficiaries and 120 beneficiaries of ABP for the study. Data were collected through interview schedule/questionnaire. The data collected were analyzed using both descriptive (such as frequencies, percentages and mean) and inferential statistics such Z-test. The findings showed an average output of 62.6bags (3130Kg) for beneficiaries and 48.5bags (2425Kg) for non-beneficiaries of ABP. The z-test result showed a significant difference in the farm output of beneficiaries ($\bar{x}=62.616$ bags) and non-beneficiaries ($\bar{x}=48.541$ bags) of ABP. The study concluded that ABP had positive effect on rice production in Southeast, Nigeria since the beneficiaries of the programme had higher output than the non-beneficiaries. Poor administration/complex protocol ($\bar{x}=3.0$), insufficient/ unavailability of land ($\bar{x}=3.1$), long bureaucratic procedures ($\bar{x}=3.29$), delay in loan disbursement ($\bar{x}=3.39$) and high cost of labour ($\bar{x}=3.2$) were the most severe constraints faced by rice farmers in southeast, Nigeria. Constraints faced by non-beneficiaries of ABP include ($\bar{x}=3.36$), limited awareness ($\bar{x}=3.62$), insufficient/unavailability of land ($\bar{x}=3.37$) and lack of incentives ($\bar{x}=3.75$). Therefore, the study recommended that the awareness of the ABP should be heightened to increase the number of beneficiaries in southeast and across the nation; this will help to boost the agricultural subsector, and in the long-run ensures food security for the nation and also reduce importation which is one of the objectives of ABP. The loan should be disbursed early to ensure timely planting.

Keywords: Anchor Borrowers' Programme, Rice farmers, Effect, production and Southeast

INTRODUCTION

Rice (*Oryza sativa*) is a cereal crop which is valued for its source of starch. It is the most important staple food because it is mostly served in ceremonies. It is also used by many

manufacturing industries in making of rice flour and can be prepared in many forms such as jollof, fried rice white rice with stew. In Nigeria, rice consumption continues to increase due to the fact that it is a major food served in ceremonies and homes. Nigeria imports foods for domestic consumption. This is puzzling because a greater percentage of her population is engaged in agriculture. This can be attributed to the neglect of agriculture since crude oil was discovered in commercial quantities in the 1960s. Before the discovery of oil in exportable quantities, the country depended largely for her foreign exchange earnings on agricultural exports and the various regions in the country were quite active in agricultural production (Onuka, 2017). The neglect of agriculture led to the over dependence on imported foods in our country. The dependence on imported foods has hampered the productive level of the local farmers; displacing local production and creating rising unemployment (Onuka, 2017). Most foods eaten in our country today are imported foods especially foreign rice. Nigeria today is ranked as global second largest importer of rice after the Philippines (Onuka, 2017). The country is known as a net importer of rice, which had adversely affected local production (Akinwumi, 2013) in Ayinde *et. al* (2018). In 2011 estimates, Nigeria was the largest importer of rice in the world, accounting for about 3.4 million metric tonnes (United States Department of Agriculture / Foreign Agricultural Service (USDA/FAS), 2014).

When a country depends so much on importation it increases a country's import bill. In order to curb this problem and boost agricultural production the government had implemented numerous programmes overtime, Some of which are National Accelerated Food Production programme launched in 1972 to develop technologies to rapidly increase the production of six major crops, namely: sorghum, millet, wheat, rice, maize and cassava, Operation Feed the Nation was launched in 1976 in the drive for self-sufficiency in food, the River Basin Development Authorities, Green revolution programmes was launched in 1980 primarily aimed at making Nigeria self-sufficient and reliant in food needs, by 1981 ADP was launched which focused on extension work, fertilizer and credit schemes on the larger farmers, in 1986, Directorate for Food, Roads and Rural Infrastructure (DFRRI) was perceived as a rural development strategy, the National Fadama project 1 was implemented between 1992 and 1993 (Agbamu, 2009) and the Anchor Borrowers' programme which is the focus of our study.

The Central Bank of Nigeria (CBN) in line with its developmental function established the Anchor Borrowers' Programme (ABP) on November 17, 2015. The broad objective of the ABP is to create economic linkage between smallholder farmers and reputable large-scale processors with a view to increasing agricultural output and significantly improving capacity utilization of processors. Other objectives include: Increase banks' financing to the agricultural sector, Reduce agricultural commodity importation, Increase capacity utilization of agricultural firms, Create new generation of farmers /entrepreneurs and employment, Reduce the level of poverty among smallholder farmers, Assist rural smallholder farmers to grow from subsistence to commercial production levels (Central Bank of Nigeria, 2016). Given the objectives of this programme, it therefore calls for attention to what extent is the programme having effect on rice production in Southeast, Nigeria it is on this backdrop that study was carried out.

Farmers who participate in ABP will have access to loan to purchase farm inputs, hire labour and expand scope of production which in thus leads to commercial production, increased income and enhanced living standard. The programme has reputable input suppliers that partner with them to ensure that farmers use improved seeds for their cultivation because facilitators provide the farmers with inputs such as seeds, fertilizer. It entails organization of

training for farmers in order to educate them on how to access loan, open a loan account through the banks they are partnering with, and good practices before the commencement of planting. ABP offers farm labour through mechanization to the farmers. This is because the Anchor borrowers' Programme normally converts part of the loan to services like ploughing, harrowing and supplying of planting materials.

The broad objective of the study was to assess the effects of Anchor Borrowers' Programme on rice production in southeast Nigeria Specifically,(i) the study ascertained the output of rice farmers beneficiaries and non-beneficiaries of Anchor Borrowers' Programme in South-east; (ii)determined the income of rice farmers beneficiaries and non-beneficiaries of ABP and (iii) determined the constraints to rice farmers' participation in Anchor Borrowers' Programme; The hypothesis tested was; There was no significant difference between output of rice farmers' beneficiaries and non-beneficiaries of Anchors Borrowers Programme in the study area.

METHODOLOGY

Study Area

The study was carried out in South-east Nigeria. South-east Nigeria is located within latitude 5°N to 6°N of Equator and latitudes 6°E and 8°E of Greenwich meridian. South-East Zone of Nigeria is made up of Enugu, Anambra, Imo, Abia and Ebonyi state. The zone occupies a total land mass of 10,952,400 hectares with a population of 16,381,729 (NPC, 2006). The South-east is in rainforest zone of Nigeria. It is in rain forest zone and known for the cultivation of certain crops like cassava, yam, okra, rice, cocoyam etc.

Sampling Procedure and Data Collection

The target populations for the study were beneficiaries and Non-beneficiaries of Anchor Borrowers' Programme in rice production in the Southeast Nigeria. The list of beneficiaries was collected from NIRSAL ICT in CBN and through snowball for non-beneficiaries. A multi-stage sampling procedure was adopted in selecting sample for the study. The first stage involved purposive selection of three states out of the five states in the South- East, Nigeria, namely: Ebonyi, Anambra and Imo due to the prevalent cultivation of rice in the areas. The second stage adopted purposive selection of 2 agricultural zones from each of the 3 selected states namely Ebony North, Ebony South (Ebony State) Anambra, Awka (Anambra state), Okigwe and Orlu (Imo State) giving rise to a total of six Agricultural zones. This was done in order to have a well representation of the states and to also capture the zones where rice is being cultivated. Third stage also adopted purposive selection of 2 blocks (Local Government Areas, LGAs) from each of the 6 zones selected namely; Izzi, Ebonyi, (Ebonyi North Agricultural zone), Afikpo, Ivo (Ebonyi South Agricultural zone), Anambra West, Ayamelu, (Anambra Agricultural Zone), Awka North, Awka West, (Awka Agricultural Zone) IhitteUboma, Okigwe (Okigwe Agricultural Zone), Ideato North, Ideato South (Orlu Zone) due to the fact that not all blocks in the study area grow rice. The fourth stage also involved a purposive selection of one circle (community) from each of the selected blocks namely; Igbeagu (IzziLGA),Mbeke (Ebony LGA),Ozizza (Afikpo), Akaeze (Ivo LGA), Anam (Anambra West), Omo (Ayamelu), Igbariam (Awka North), Aguleri (Awka West), Uboma (IhitteUboma), Onuimo (Okigwe) Arondizuogu (Ideato North), Uzii (ideato South) making a total of 12 circles. Ten Rice farmers' non beneficiaries of ABP were selected through snowball with the help of village heads from each of the selected circles which comprised sample size of 120 rice farmers who are non-beneficiaries.

Censored selection of Ivo LGA, Afikpo North, Ezza South, Ohaozara, Awka North, Orumba North, Ihiteuboma, Ideato North, Ideato South and Oguta was adopted, this was promoted due to the fact that not all local Government in the Area are beneficiaries and to also have a good representative of the study area. A list of beneficiaries of ABP was collected from NIRSAL ICT in CBN.

A proportionate sampling technique was used to select farmers from the participating Local government areas to give a sample size of 120 beneficiaries. Proportionate sampling is a type of stratified sampling with proportionate stratification. The sample size of each stratum is proportionate to the population size of the stratum. It is a sampling method used when a population is composed of several subgroups that are different in number. Each sample stratum has the same sample fraction. In proportionate sampling, the j th sample size is given as:

$$n_j = \frac{k \times n}{N}$$

Where,

n_j = size of the j th stratum

K = the population size in the stratum

N = the entire population

n = sample size (As used by Chidiebere-Mark, 2019)

Summary of sampling for the beneficiaries rice farmers of ABP

Selected States	Participating LGAs	Total Number of Beneficiaries	No Sampled
Ebonyi	Ivo	94	21
	Afikpo North	76	17
	Ezza South	123	27
	Ohaozara	96	21
Anambra	Awka North	41	9
	Orumba North	40	9
Imo	Ihiteuboma	32	7
	Ideato north	20	4
	Ideato South	15	3
	Oguta	10	2
Total		547	120

Source: NIRSAL ICT Unit in CBN and ADP

$$\text{Ivo } 94/547 \times 120 = 21$$

$$\text{Afikpo North } 76/547 \times 120 = 17$$

$$\text{Ezze South } 123/547 \times 120 = 27$$

$$\text{Ohaozara } 96/547 \times 120 = 21$$

$$\text{Awka North } 41/547 \times 120 = 9$$

$$\text{Orumba } 40/547 \times 120 = 9$$

$$\text{Ihiteuboma } 32/547 \times 120 = 7$$

$$\text{Ideato North } 20/547 \times 120 = 4$$

$$\text{Ideato South } 15/547 \times 120 = 3$$

$$\text{Oguta } 10/547 \times 120 = 2$$

Data were collected through the use of questionnaire. Data were based on the output of the beneficiaries and non-beneficiaries of Anchor Borrowers Programme, data on their income were also collected and the constrained to participation.

Analytical Technique

Data collected were analyzed using both descriptive such as mean and inferential Statistics like Z-test. Objective i, which was to ascertain the output of rice farmers' beneficiaries and non-beneficiaries of Anchor Borrowers, Programme, was measured using mean. Objective ii which was to determine the income of rice farmers' beneficiaries and non-beneficiaries of ABP was realized using mean. Objective iii which was to identify the constraints to rice farmers' participation in Anchor Borrowers' Programme, Respondents were asked to indicate the seriousness of each constraint on a 3 point Likert-type scale (serious constraints =3, unserious constraints =2 and not a constraints =1), The mean score was obtained by adding 3+2+1=6 divided by 3 =2. Therefore the cut-off mean of 2 was obtained, any mean score of 2.0 and above was considered as serious constraint and below 2.0 was considered as not a serious constraint. The effect of ABP on rice production was realized using beneficiaries and Non-beneficiaries model, this was obtained by comparing the mean output of both groups. The hypothesis of no significant difference between output of rice farmers' beneficiaries and non-beneficiaries of Anchors Borrowers Programme, was analyzed using z-test. It was expressed as follows:

$$z = \frac{|\bar{x}_1 - \bar{x}_2|}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

Where \bar{x}_1 and \bar{x}_2 are the mean output of samples

n_1 and n_2 are the sample sizes for the first (beneficiaries) and second (Non beneficiaries) group

S_1^2 = Sample variance.

S_2^2 = Sample variance

RESULTS AND DISCUSSION

Average Annual Output of Rice Farmers Beneficiaries and Non-beneficiaries of Anchor Borrowers, Programme

The distribution of respondents according to the output of rice farmer's beneficiaries and non-beneficiaries in ABP is presented in table 1. From the table it can be observed that there was variation between the various States in the output of both beneficiaries and non-beneficiaries in the south east, Nigeria, The beneficiaries had an average annual output of (63bags worth of 50Kg each which was equivalent to 3,150kg) while the Non beneficiaries had an annual average output of (48.53bags worth of 50Kg each which was equivalent to 2,426.5kg) in the south-east. This implied that the mean annual output of the beneficiaries was more than the non-beneficiaries. This was expected because when farmers have access to fund, they tend to buy more inputs, hire labour and expand their scope of production. This explains the production theory, which states that a unit of input use leads to an increase in output. This result is in agreement with Okeke, Mbanasor and Nto (2019) who compared the value of productive assets, farm output, income, and profit of beneficiary and non-beneficiary rice farmers; and asserted that rice farmers' farm output improved more for ABP beneficiaries (29.90 bags 1,495Kg) than for non-beneficiaries (19.67 bags 983.5).

There was a significant difference between the output of beneficiaries and non-beneficiaries of ABP, as the output of beneficiaries was greater than the output of non-beneficiaries (Umeh, 2019). This finding further agrees with Udemezue (2018) who asserted that Rice production in Nigeria has increased from 5.5 million tons in 2015 to 5.8 million tons in 2017, consumption

had increased because of increased local production of the commodity. The consumption rate now is 7.9 million tones and the production rate has increased to 5.8 tons per annum. The increase was as a result of the Central Bank of Nigeria (CBN)'s Anchor Borrowers Program with a total of 12 million rice producers (Udemezue, 2018). Also, this study implied that once there is increase in local production, automatically importation too will reduce. This implies that the programme is having an effect on rice production in southeast since it is meeting the programme objective.

Table1: Distribution of Respondents according to Average Annual Output of Rice Farmers Beneficiaries and Non-beneficiaries of Anchor Borrowers, Programme in southeast, Nigeria

Output	Beneficiaries				Non-beneficiaries			
	Anambra	Ebonyi	Imo	SE	Anambra	Ebonyi	Imo	SE
	\bar{x}	\bar{x}	\bar{x}	\bar{x}	\bar{x}	\bar{x}	\bar{x}	\bar{x}
Quantity (50Kg bags)	62.65	83.35	41.85	62.6	49.2	71.5	24.9	48.53

Source: Field survey, 2020

Average Annual Income of Rice Farmers Beneficiaries and Non-beneficiaries of Anchor Borrowers, Programme

The distribution of respondents according to the annual income of rice farmer's beneficiaries and non-beneficiaries of ABP is presented in Table 2. The result in table 2 shows that there were differences in both the income of beneficiaries (₦522, 641.67) and non-beneficiaries (₦409, 158.73) in paddy rice production in the study area. It was expected that the beneficiaries' income be higher than that of non-beneficiaries because it was observed that they had more output in table 1 higher output will definitely transform to high income. The income of the beneficiaries of ABP was higher than that of Non-beneficiaries. This implied that Anchor Borrowers programme had effect on rice production in southeast, Nigeria. High income means that the farmers will want to have enough money to meet farm needs and other personal needs, which thus metamorphosed to good living standard and reduction in poverty. This result is in line with the study of Okeke, Mbanasor and Nto (2019) who in their study on the effect of Anchor Borrowers' Programme access among rice farmers in Benue State, Nigeria opined that rice farmers' income improved significantly more for ABP beneficiaries (₦375,342.13) than for non-beneficiaries (₦286,567.91).

Table 2: Distribution of Respondents according to average annual Income of Rice Farmers Beneficiaries and Non-beneficiaries of Anchor Borrowers, Programme

Income	Anambra		Ebonyi		Imo		SE	
	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD
Beneficiaries	556600.0	171620.7	631000.0	1126.31	38032	160612.0	522641.6	339493.6
Non-beneficiaries	334075.0	162514.5	591500.0	307750.7	225025.0	60245.4	409158.7	298899.3

Source: Field survey, 2020

Comparison of Average Annual output of Beneficiaries and Non beneficiaries of ABP in Southeast Nigeria

Table 3 shows the result of Z-test of the difference between the output of beneficiaries and non-beneficiaries of Anchors Borrowers Programme. The z-test result showed a significant difference in the farm output of beneficiaries ($\bar{X} = 62.616\text{bags}/3,756.6\text{Kg}$) and non-beneficiaries ($\bar{X} = 48.541\text{bags}/2,427.1\text{Kg}$) of ABP with a Z-value of (18.066) therefore rejecting the null

hypothesis. This result indicated that, the beneficiaries had more output than the non-beneficiaries this could be due to the credit given to the beneficiaries, they were able to use more inputs resulting in higher productivity.

The implication was that ABP had enhanced the capacity of the beneficiary of rice farmers to realize significant increase in their farm output. This finding agrees with Adebayo and Adeola (2008) who observed that agricultural credit enhances productivity and promotes standard of living by breaking the vicious cycle of poverty of the resource poor farmers. This is in line with the findings of Umeh and Adejo (2019) that there was a significant difference between the output of beneficiaries and non-beneficiaries of ABP, as the output of beneficiaries was greater than the output of non-beneficiaries.

Table 3: Z-test test of significant difference between rice farmers output of beneficiaries and non-beneficiaries

	N	Mean	SD	Zcal	Ztab
Beneficiaries	120	62.6167	37.96708	18.066	1.67***
Non-beneficiaries	120	48.5417	39.23226	13.554	

Source: Field survey, 2020

Constraints faced by Rice Farmers Beneficiaries in participating in Anchor Borrowers, Programme Southeast

The distribution of respondents according to their constraints is presented in Table 4. The result on the constraints rice farmers beneficiaries face showed a grand mean of 2.45 implying that beneficiaries in the study area faced serious constraints since the grand mean was greater than the cut-off mean. From the result all the constraints listed were actually what the farmers go through in participating in ABP. Poor administration/complex protocol (\bar{X} =3.0), insufficient or unavailability of land (\bar{X} =3.1), long bureaucratic procedures (\bar{X} =3.29), delay in loan disbursement (\bar{X} =3.39) and high cost of labour (\bar{X} =3.2) were the most severe constraints faced by rice farmers beneficiaries in southeast, Nigeria. Sometimes a farmer can get frustrated in trying to meet up with programme requirement because of the long bureaucratic approach which can hinder a farmer from participating. Also, a farmer may have interest in the programme but because the farmer does not have access to up to a hectare, he finds it difficult to participate. Constraints faced by non-beneficiaries of ABP in the study area included (\bar{X} =3.36), limited awareness (\bar{X} =3.62), insufficient/unavailability of land (\bar{X} =3.37) and lack of incentives (\bar{X} =3.75) were the major constraints faced by the non-beneficiaries farmers in the study area. Most of the Non beneficiaries have poor knowledge of ABP and even those that were aware were constrained from participation because of insufficient land this is because for you to participate you must have at least one hectare of a land as their conditions. Badejo (2018) observed that there is limited awareness of Anchor Borrowers' programme among rice farmers. The implication of limited awareness is low participation because a farmer cannot participate in a programme that he/she has no knowledge of. This result is also in line with the study of Isife and Madukwe (2005) on the constraints to farmers effective participation in Agric extension programmes of non-profit nongovernmental organization in South-Eastern Nigeria, results showed that unfavourable financial terms, poor extension agent outputs, poor farmers' educational trainings, poor farmer-agent contacts and complexity of recommended technologies were major constraints to farmers effective participation in extension programme.

Table4: Distribution of Constraints faced by Rice Farmers Beneficiaries in participating in Anchor Borrowers, Programme Southeast

Constraints	Anambra		Ebonyi		Imo		Southeast		R
	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	
Poor knowledge of ABP	1.7500	.74248	1.800	.82275	1.7500	.70711	1.7667	.75296	N
Poor contacts with ABP facilitators	1.8250	.38481	1.8000	.40510	.40510	1.7500	1.7917	.40782	N
Mandatory use of FARO 44 rice variety	2.30	.790	1.6000	.49614	2.1250	.82236	2.0083	.77238	S
Delayed input supply	2.80	.405	3.2000	.60764	2.8250	.44650	2.9417	.52334	S
Delayed payment	3.00	..00000	2.8000	.82275	2.9250	.26675	2.9083	.50203	S
Poor educational status of farmers	2.25	..43853	3.2500	.77625	2.4750	.64001	2.6583	.76142	S
Poor administration/ complex protocol	3.00	..00000	3.0500	.81492	2.9500	.38895	3.0000	.51856	S
Limited awareness	2.75	..43853	3.1000	.70892	2.8000	.51640	2.8833	.582	S
Poor soil fertility	1.5000	.78446	1.5500	.87560	1.3500	.73554	1.4667	.79846	N
Insufficient or unavailability of land	3.00	..00000	3.3000	.96609	3.0250	.47972	3.1083	.63240	S
Long bureaucratic procedures	3.35	..48305	3.2000	.68687	3.3250	.57233	3.2917	.58548	S
Pest and disease infestation	2.75	..43853	2.4000	1.08131	2.7500	.58835	2.6333	.76623	S
Delay in loan disbursement	3.75	..43853	2.8500	.66216	3.5750	.54948	3.3917	.67731	S
poor extension agents contacts to rice farmers	1.5000	.78446	1.5500	.87560	1.3500	.73554	1.4667	.79846	N
Lack of incentives	2.75	..43853	2.6000	.87119	2.7000	.51640	2.6833	.63489	S
Lack of proper monitoring	2.85	..86380	3.1000	.63246	2.9000	.81019	2.9500	.77622	S
High cost of labour	3.00	..00000	3.6500	.48305	3.0750	.26675	3.2417	.42989	S
Unfavorable financial terms	2.55	..50383	3.4000	.81019	2.6500	.62224	2.8667	.75519	S
Grand mean							2.45		

Source: Field survey, 2020. Decision rule; Discriminating index=2. ≥ 2 SC Serious Constraint; < 2 NSC Not a Serious constraint)

CONCLUSION

Anchor Borrowers' Programme (ABP) enhanced the output and income of rice farmers in the Southeast, Nigeria. Beneficiaries of ABP had more output and income than non-beneficiary rice farmers who were worse in terms of farm income and output. Difference between the output of beneficiaries and non-beneficiaries of ABP, as the output of beneficiaries was greater than the output of non-beneficiaries.

1. ABP facilitators should ensure timely disbursement of fund before planting season sets in
2. The programme should reduce the condition of the farmer having access to at least a hectare of land before participation so that other farmers who don't have access to up to 1 hectare can benefit.
3. Government should encourage the continuity of the programme so that its aim towards achieving food security of the nation will be attained.

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